NOAA Fisheries

Coral Reef Conservation Program

Program Highlights for Fiscal Year 2004 and Selected Accomplishments for FY 2003

PACIFIC

Removal of Derelict Fishing Gear from Coral Reefs. **FY2003:** NOAA Fisheries (National Marine Fisheries Service - NMFS) leads a major interagency partnership to clean up existing concentrations of derelict fishing gear in the Main Hawaiian Islands (MHI) and Northwestern Hawaiian Islands (NWHI). NOAA is collaborating with the National Ocean Service, the State of Hawaii, U.S. Fish and Wildlife Service, US Coast Guard, U.S. Navy, the University of Hawaii, Hawaii Metals Recycling, H-Power, and other agencies and partners. In FY-2003 divers removed 122 tons of derelict fishing gear from the beaches and reefs of Pearl and Hermes Atoll, Midway Atoll, Kure, Lisianski, Laysan and French Frigate Shoals. Divers essentially cleared Midway Atoll of all derelict gear. NMFS debris divers also continued a number of studies to understand the impact and source of the derelict fishing gear. These studies included documentation of net type, assessment of algal communities associated with the derelict gear removal scars, and growth rate studies of different coral associated with the derelict gear.

Cutting derelict fishing gear from coral. Photo by Megan Meows

Net analysis.

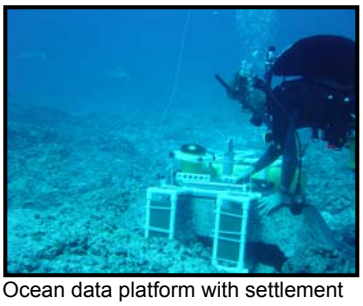
FY2004: NMFS will continue the interagency effort to remove derelict fishing gear from the NWHI and to document derelict gear types to assist in the identification of possible sources. In addition, drifters will be deployed in the convergence zone (attached to derelict nets if possible) to monitor derelict gear motion and support will be provided for an airborne experiment to determine the feasibility of detecting fishing gear in the open ocean. In an effort to heighten the awareness in the international community, NOAA supported an Asia-Pacific Economic Cooperation (APEC) seminar on Derelict Fishing Gear and Associated Debris, which developed a set of recommendations presented at the APEC conference in February 2004.

Assessment and Monitoring of U.S. Pacific Coral Reef Resources. **FY2003:** NMFS has been a key partner in understanding the unique resources of the NWHI and other remote Pacific Islands. Coral reef monitoring and assessment cruises were conducted to the NHWI and to Guam and the Commonwealth of Northern Mariana Islands (CNMI). The Mariana Archipelago cruise provided an opportunity for local and federal scientists to work side-by-side to provide scientific support for local and national-level ecosystem-based conservation and management of the coral reef ecosystems. This marked the most comprehensive archipelago-wide, multi-disciplinary assessment of these coral reef ecosystems ever conducted. Researchers surveyed 15 islands and 12 oceanic banks along entire archipelago. Surveys included rapid ecological assessments of benthic habitats, tow board surveys of habitat, fish and sea turtles, and multibeam mapping. The R/V *AHI*, which is outfitted with multibeam sonar to map water depths ranging from 5 to 300m, was deployed for the first time in Saipan, CNMI. Over 500 square kilometers of bathymetric and imagery data were collected and benthic habitat maps were created for Saipan, Tinian and Tatsumi Bank, and Marpi Bank in CNMI and for Guam's north end. In the NHWI, NMFS continued its work with the State of Hawaii, University of Hawaii, and NHWI Reserve to monitor the reomote islands and atolls coral reefs. Researchers

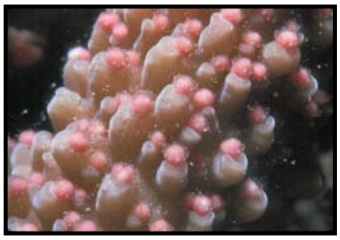
Towed Diver. Picture by Stephanie Holzwarth.

resurveyed 16 sites that were bleached in 2002. Seven sites had partial mortality of coral colonies, with dead areas invaded by algae.

FY2004: NMFS will conduct the second monitoring and assessment cruise to American Samoa, the U.S. Line and Phoenix Islands, and will stop at Johnson Atoll for the first time. Working with local resource agencies, NMFS will focus monitoring efforts on outer Islands that are less accessible to local resource managers and conduct multibeam mapping of mid depth reefs around the island of Tutuila. NMFS will also continue to lead in the monitoring efforts of the NHWI.


Ocean data platform with settlement plates. Picture by Stephanie Holzwarth.

Reef Fish Larval Transport and Coral and Fish Recruitment In Hawaii. **FY2003:** In order to assist mangers in determining areas of larval sources and sinks within the Hawaiian Archipelago, NMFS expanded its efforts to understand larval movement and recruitment. Scientists began collecting fish and water samples from Midway Atoll to examine the trace element signatures in fish otoliths to determine if there are physical and chemical differences between the habitats of the NWHI and the MHI that result in corresponding differences in elemental chemistry or growth rate history encoded in the otoliths of reef fishes. During past cruises, scientists monitored newly recruited reef fishes and deployed settlement plates to look at coral recruitment. In 2003, settlements plates from seven sites were collected for analysis. NMFS also deployed additional satellite-tracked drifter buoys and conducted acoustic Doppler current profiler transects to examine upper ocean surface circulation patterns. Results of this study would provide the first sound empirical evidence for evaluating the larval dispersal issue within the NWHI-MHI.


Coral spawning.

FY2004: NMFS will expand sampling sites for chemical analysis of otoliths and water to MHI, in particularly around the Island of Hawaii. Additionally, NMFS will continue drifter, oceanographic, and settlement plate studies and expand partnerships to include researchers working in the MHI.

Increase the Capacity of Coral Reef Fishery Management. **FY2003:** NMFS's Pacific Island Regional Office expanded its presence in the U.S. Pacific Island territories by opening a satellite office in American Samoa. This new initiative will assist territorial resource managers in achieving sustainable balance between coastal development and preservation. This office will coordinate with a number of existing programs including, assisting the Territory government in implementing local action strategies and other initiatives, working with the Western Pacific Regional Fisheries Management Council to implementation the Coral Reef Ecosystem Fishery Management Plan, assist NMFS in monitoring efforts, and coordinate work with NOAA National Ocean Service in the abandoned vessel inventory and removal planning for restoration of coral reef habitat. In addition, it is expected that this office will develop a close working relationship with local resource agencies in American Samoa to aid in identifying and designating marine protected areas, and other appropriate methods of protecting and conserving coral reef habitat.


Maori wrasse
(Cheilinus undulatus)

FY2004: NMFS will open a satellite office in the Commonwealth of the Northern Mariana Islands (CNMI), which will be equivalent to the new American Samoa office. This office will assist CNMI in implementing local action strategies, facilitate and coordinate cooperative studies with NOAA Fisheries Pacific Fishery Science Center, NOS Pacific Services Center, Western Pacific Fishery Management Council and local government personnel on coral reef and other related habitat issues.